

Application No.10/715,243
Letter of Response dated 06/24/05
Reply to Office Action of 06/06/2005

REMARKS

Favorable reconsideration of this application is respectfully requested.

Claims 1-20 are pending in this case. Of these claims, claims 16-20 have been withdrawn from consideration.

Claims 14 and 15 are allowed.

Claims 1 and 6-13 are rejected under 35 U.S.C. § 103(a) as obvious over Underwood (U.S. Pat. 5,816,535) in view of Kenzie (U.S. Pat. 4,513,931) and Tillman (U.S. Patent 6,578,885). Claims 2-5 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

This rejection of claims 1 and 6-13 as obvious over Underwood in view of Kenzie and Tillman is traversed for the following reasons.

Applicants' invention as recited in claim 1 is directed to a device for severing an extraction line connected between a cargo load and an extraction parachute when the cargo load fails to eject from an aircraft. The device 23 comprises a cutter 27 spaced from and spring-biased in the direction of the extraction line 25, and a housing for the cutter. In addition, the device includes means for mechanically restricting the cutter from engaging and severing the extraction line, and means responsive to a radio signal from a transmitter on the aircraft for disabling the restricting means so that the cutter is released and severs the extraction line. Dependent claims 6-13 further define the device.

The primary reference, Underwood, discloses a system for releasing a cargo extraction parachute if the cargo attached to the parachute becomes jammed within the cargo compartment. (Col.1, lines 6-9.) Referring to FIG. 1, the extraction parachute 32A includes an attachment line 34A that is releasably connected to an extraction force transfer coupling 36A. (Col.4, lines 29-32.) Referring to FIG. 2, the end of the attachment line 34A is in the form of a loop 44 that is wrapped about a pin 38. (Col.4, lines 39-41.) An electrically initiated explosively actuated line cutter 62 is mounted on the coupling 36A positioned such that, when actuated, its cutter 64 severs the looped end of the attachment line 28 freeing the extraction parachute 32A. (Col. 4, lines 55-58.)

The primary reference, taken alone, does not teach the invention recited in the claims. Respecting base claim 1, for example, Underwood does not teach either a spring-biased line cutter, or means for mechanically restricting a spring-biased line cutter from engaging and severing the extraction line, or means responsive to a radio signal from a transmitter on the aircraft for disabling the restricting means so that the cutter is released and severs the extraction line.

It is the Examiner's position that Kenzie shows a spring-biased line cutter, means for mechanically restricting a spring-biased line cutter from engaging and severing a line, and means for disabling the restricting means so that the cutter is released and severs the line, and that it would have been obvious to substitute the same for the electrically initiated-explosively actuated line cutter in Underwood's combination of an extraction line and an electrically initiated-explosively actuated line cutter.

It is the Examiner's further position that Tillman shows that a radio control means to control a distant actuator is well known and that it would have been obvious to have made the whole system remotely controlled.

The secondary reference, Kenzie, discloses a device for severing a reefing line. The de-reefing cutter 22 includes a knife barrel 26. (Col. 2, line 19-21.) The knife barrel 26 has a bore 44 to receive the reefing line 20. (Col. 2, lines 34-37.) A knife 48 is held in a fixed location to one side of the bore 44 by a shear pin 50. (Col. 2, lines 38-40.) A piston assembly 56 is provided to drive the knife 48. (Col. 2, lines 44-46.) The piston assembly 56 includes a piston 58 and a spring 60. (Col. 2, lines 44-46.) The piston assembly 56 is held against axial movement by a number of balls 80 in a bore 78 extending diametrically through a retainer 66. (Col. 3, lines 58-60.) A release pin 82 is slidably received in the retainer 66 and has a groove 88 formed in its outer surface to permit the balls 80 to move out of the groove 76 when the groove 88 is aligned with the bore 78. (Col.2, lines 60-68.) In operation, a timing mechanism 112 causes the release pin 82 to move to align the groove 88 with the bore 78 so that the balls 80 move out of the groove 76 permitting the piston assembly 56 to be moved by the spring 60 toward and into contact with the head 54 of the knife 48, causing the shear pin 50 to break and driving the knife 48 through the reefing line 20. (Col.4, lines 26-38.)

The secondary reference, Kenzie, does not remedy Underwood's deficiencies. That is to say, as far as base claim 1 is concerned, for example, the recited element of a spring-biased line cutter is not shown. Kenzie's knife 48 is not spring-biased. Kenzie's knife 48 is held in a fixed location by the shear pin 50. The recited element of means for mechanically restricting a spring-biased line cutter from engaging and severing the

extraction line is not shown. Kenzie has no knife restricting means -- Kenzie's shear pin 50 does not restrict the knife 48 from severing the line. It only holds the knife 48 in a fixed location. The recited element of means responsive to a radio signal from a transmitter on the aircraft for disabling the restricting means so that the cutter is released and severs the extraction line is not shown. Kenzie has no knife restricting means. Therefore, it has no means for disabling one.

Even if one were to combine Kenzie with Underwood in the manner suggested by the Examiner, and make the whole system remotely-controlled like Tillman, Applicant's system would still not be obtained since the resulting structure would not be that defined by the claims.

It is respectfully submitted that the rejection of claims 1 and 6-13 under 35 U.S.C. §103 is based upon hindsight using the teachings of applicants' own disclosure and finds no basis in the prior art cited against this application.

In conclusion, claims 1-13 are deemed allowable. Claims 14-15 have already been allowed. Since no other issues are presented for consideration, allowance of this application and early notice of allowability is respectfully requested.

Respectfully submitted,

Mark N. Heflin
James B. Stewart
Samuel L. Kaesemeyer



ALAN P. KLEIN
Attorney for Applicant
Reg. No. 26,926

Phone: 703-696-8113